



## GUARDIAN 601 A - Symptom Flow Chart - Lift Interlock

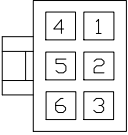
Condition	Possible Causes	Action
<ul style="list-style-type: none"> <li>• No prove out of LED's</li> </ul>	<ul style="list-style-type: none"> <li>• Connections</li> <li>• Power</li> <li>• Ground</li> <li>• Wake up</li> <li>• LED panel</li> <li>• Harness(es)</li> <li>• Module</li> </ul>	<ul style="list-style-type: none"> <li>• Go to Pinpoint Test A</li> </ul>
<ul style="list-style-type: none"> <li>• LED's not illuminated when conditions met</li> </ul>	<ul style="list-style-type: none"> <li>• Connections</li> <li>• Harness(es)</li> <li>• Lift power</li> <li>• Lift not stowed</li> <li>• Module</li> </ul>	<ul style="list-style-type: none"> <li>• Go to Pinpoint Test B</li> </ul>
<ul style="list-style-type: none"> <li>• LED's properly illuminate but lift not operating</li> </ul>	<ul style="list-style-type: none"> <li>• Connections</li> <li>• Harness(es)</li> <li>• Lift</li> <li>• Module</li> </ul>	<ul style="list-style-type: none"> <li>• Go to Pinpoint Test C</li> </ul>
<ul style="list-style-type: none"> <li>• LED's properly illuminate but shifter does not lock</li> </ul>	<ul style="list-style-type: none"> <li>• Connections</li> <li>• Harness(es)</li> <li>• OEM-shift lock solenoid</li> <li>• OEM-fuse</li> <li>• Module</li> </ul>	<ul style="list-style-type: none"> <li>• Go to Pinpoint Test D</li> </ul>
<ul style="list-style-type: none"> <li>• LED's flash lift does not operate</li> </ul>	<ul style="list-style-type: none"> <li>• Current draw of lift</li> <li>• Module revision</li> </ul>	<ul style="list-style-type: none"> <li>• Go to Pinpoint Test E</li> </ul>
<ul style="list-style-type: none"> <li>• Lift operates when safety conditions are not met</li> </ul>	<ul style="list-style-type: none"> <li>• Connections</li> <li>• Harness(es)</li> <li>• Lift</li> <li>• Module</li> </ul>	<ul style="list-style-type: none"> <li>• Go to Pinpoint Test F</li> </ul>
<ul style="list-style-type: none"> <li>• Shifter never locks</li> </ul>	<ul style="list-style-type: none"> <li>• Connections</li> <li>• Harness(es)</li> <li>• OEM-shift lock solenoid</li> <li>• OEM-fuse</li> <li>• Module</li> </ul>	<ul style="list-style-type: none"> <li>• Go to Pinpoint Test G</li> </ul>

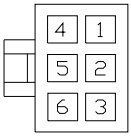
<ul style="list-style-type: none"> <li>▪ Cannot shift out of park</li> </ul>	<ul style="list-style-type: none"> <li>▪ Connections</li> <li>▪ Harness(es)</li> <li>▪ OEM-shift lock solenoid</li> <li>▪ Lift stowed circuit</li> <li>▪ Module</li> </ul>	<ul style="list-style-type: none"> <li>▪ Go to Pinpoint Test H</li> </ul>
<ul style="list-style-type: none"> <li>▪ Lift operates intermittently</li> </ul>	<ul style="list-style-type: none"> <li>▪ Connections</li> <li>▪ Harness(es)</li> <li>▪ Park</li> <li>▪ Park brake</li> <li>▪ Lift</li> <li>▪ Module</li> </ul>	<ul style="list-style-type: none"> <li>▪ Go to Pinpoint Test J</li> </ul>

The following items are necessary for proper diagnosis:

- Digital multimeter (do not use a test lamp)
- Guardian 601A documentation  
(Available at [www.intermotive.net](http://www.intermotive.net))

## PINPOINT TEST A: NO PROVE OUT OF LEDS

Test Step	Result/Action to Take
<b>A1 Ensure that all connectors are installed correctly</b> <ul style="list-style-type: none"> <li>▪ Carefully inspect module and harness(es)</li> <li>▪ Verify correct harness connector in the correct module plug</li> <li>▪ Refer to schematics in Guardian documentation</li> </ul>	Results _____  Yes Go to A2  No Review install instructions, reinstall all connectors in their proper position. Test system for normal operation.
<ul style="list-style-type: none"> <li>▪ Are all harness connectors properly installed into module?</li> </ul>	
Test Step	Result/Action to Take
<b>A2 Ensure that all wires are in their correct connector cavity</b> <ul style="list-style-type: none"> <li>▪ Carefully inspect all harness connectors</li> <li>▪ Verify that each connector has the correct wire in each cavity</li> <li>▪ Refer to schematics in Guardian documentation for wire colors</li> </ul>	Results _____  Yes Go to A3  No Contact InterMotive for assistance with harness
<ul style="list-style-type: none"> <li>▪ Are all wires in their correct connector cavity?</li> </ul>	
Test Step	Result/Action to Take
<b>A3 Check power and grounds</b> <ul style="list-style-type: none"> <li>▪ Key in the On position</li> <li>▪ With only the lift harness and display harness plugged into module, measure voltage between pin 4 and pin 6</li> <li>▪ Measure voltage at pin 4 and pin 3</li> <li>▪ Red lead on pin 6 and pin 3</li> <li>▪ Black lead on pin 4 (back probe connector)</li> </ul>	Results _____  Yes Go to A5  No Go to A4
<ul style="list-style-type: none"> <li>▪ Are voltages greater than 10v?</li> </ul>	
 <p style="text-align: center;">Back of lift Connector</p>	
Test Step	Result/Action to Take
<b>A4 Check power at lift</b> <ul style="list-style-type: none"> <li>▪ Measure voltage at lift</li> <li>▪ Consult lift manufacturer for lift output circuit</li> </ul>	Results _____  Yes Go to A5  No Contact lift manufacturer or installer
<ul style="list-style-type: none"> <li>▪ Is voltage greater than 10v?</li> </ul>	

Test Step	Result/Action to Take
<b>A5 Check LED display</b>	
<ul style="list-style-type: none"> <li>▪ Key in the On position</li> <li>▪ Measure voltage between chassis ground and pin 1 of the display connector. (Back probe connector)</li> </ul> <div style="text-align: center;">  <p>Back of display Connector</p> </div> <ul style="list-style-type: none"> <li>▪ Is voltage greater than 4.5v?</li> </ul>	<p style="text-align: center;">Results_____</p> <p>Yes Contact InterMotive for assistance with harness</p> <p>No Contact InterMotive for assistance with harness</p>

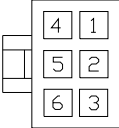
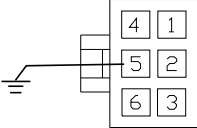
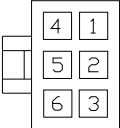
**PINPOINT TEST B: LEDS NOT ILLUMINATED WHEN CONDITIONS MET**

Test Step	Result/Action to Take
<b>B1 Ensure that all connectors are installed correctly</b>	
<ul style="list-style-type: none"> <li>▪ Carefully inspect module and harness(es)</li> <li>▪ Verify correct harness connector in the correct module plug</li> <li>▪ Refer to schematics in Guardian documentation</li> </ul> <ul style="list-style-type: none"> <li>▪ Are all harness connectors properly installed into module?</li> </ul>	<p style="text-align: center;">Results_____</p> <p>Yes Go to B2</p> <p>No Review install instructions, reinstall all connectors in their proper positions. Test system for normal operation.</p>

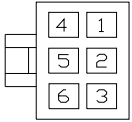
Test Step	Result/Action to Take
<b>B2 Ensure that all wires are in their correct connector cavity</b>	
<ul style="list-style-type: none"> <li>▪ Carefully inspect all harness connectors</li> <li>▪ Verify that each connector has the correct wire in correct cavity</li> <li>▪ Refer to schematics in Guardian documentation for wire colors</li> </ul> <ul style="list-style-type: none"> <li>▪ Are all wires in their correct connector cavity?</li> </ul>	<p style="text-align: center;">Results_____</p> <p>Yes Go to B3</p> <p>No Contact InterMotive for assistance with harness</p>

Test Step	Result/Action to Take
<b>B3 Check operation</b>	
<ul style="list-style-type: none"> <li>▪ Key in the On position</li> <li>▪ Perform each function, set park brake, unfold lift</li> </ul> <ul style="list-style-type: none"> <li>▪ Which LED does not illuminate?</li> </ul>	<p>Lift power - Go to B4</p> <p>Lift not stowed - Go to B6</p>

Test Step	Result/Action to Take
<b>B4 Check park brake operation</b>	
<ul style="list-style-type: none"> <li>▪ Key in the On position</li> <li>▪ Apply and release park brake</li> </ul> <ul style="list-style-type: none"> <li>▪ Does the park brake light illuminate on the dash?</li> </ul>	<p style="text-align: center;">Results_____</p> <p>Yes Go to B5</p> <p>No Contact OEM dealer for assistance</p>

Test Step	Result/Action to Take
<p><b>B5 Check park brake operation</b></p> <ul style="list-style-type: none"> <li>▪ Key in the On position</li> <li>▪ Apply and release park brake</li> <li>▪ Measure voltage between chassis ground and pin 1 of the vehicle 1 connector (back probe connector)</li> </ul>  <p style="text-align: center;">Back of Connector</p> <ul style="list-style-type: none"> <li>▪ Does the voltage read 0v with park brake applied and 12v with park brake released</li> </ul>	<p style="text-align: center;">Results _____</p> <p>Yes Go to B7</p> <p>No Contact InterMotive for assistance with harness</p>
Test Step	Test Step
<p><b>B6 Check lift stowed signal</b></p> <ul style="list-style-type: none"> <li>▪ Key in the On position</li> <li>▪ At the 6 pin connector at module labeled lift, back probe pin 5 and jump to chassis ground</li> </ul>  <p style="text-align: center;">Back of Connector</p> <ul style="list-style-type: none"> <li>▪ Does the lift not stowed LED illuminate?</li> </ul>	<p style="text-align: center;">Results _____</p> <p>Yes Inspect lift stowed switch or lift adjustment</p> <p>No Contact InterMotive for assistance with module</p>
Test Step	Test Step
<p><b>B7 Check park circuit</b></p> <ul style="list-style-type: none"> <li>▪ At the vehicle 1 connector at module, measure voltage at pin 4 (back probe connector)</li> </ul>  <p style="text-align: center;">Back of Connector</p> <ul style="list-style-type: none"> <li>▪ Is there 12v in park only?</li> </ul>	<p style="text-align: center;">Results _____</p> <p>Yes Contact InterMotive for assistance with module</p> <p>No Contact InterMotive for assistance with harness</p>
<b>PINPOINT TEST C: LED's PROPERLY ILLUMINATE BUT LIFT DOES NOT OPERATE</b>	
Test Step	Result/Action to Take
<p><b>C1 Ensure that all connectors are installed correctly</b></p> <ul style="list-style-type: none"> <li>▪ Carefully inspect module and harness(es)</li> <li>▪ Verify correct harness connector in the correct module plug</li> <li>▪ Refer to schematics in Guardian documentation</li> </ul> <ul style="list-style-type: none"> <li>▪ Are all harness connectors properly installed into module?</li> </ul>	<p style="text-align: center;">Results _____</p> <p>Yes Go to C2</p> <p>No Review install instructions, reinstall all connectors in their proper positions. Test system for normal operation.</p>

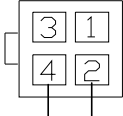
Test Step	Result/Action to Take
<b>C2 Ensure that all wires are in their correct connector cavity</b> <ul style="list-style-type: none"> <li>Carefully inspect all harness connectors</li> <li>Verify that each connector has the correct wire in correct cavity</li> <li>Refer to schematics in Guardian documentation for wire colors</li> </ul>	<p>Results _____</p> <p>Yes Go to C3</p> <p>No Contact InterMotive for assistance with harness</p>
<ul style="list-style-type: none"> <li>Are all wires in their correct connector cavity?</li> </ul>	

Test Step	Result/Action to Take
<b>C3 Check lift operation</b> <ul style="list-style-type: none"> <li>Key in the On or Off position</li> <li>Ensure that all conditions met, park brake set vehicle in park</li> <li>Measure voltage at pin 1 of the lift harness connector (back probe)</li> </ul> <div style="text-align: center;">  <p>Back of Connector</p> </div> <ul style="list-style-type: none"> <li>Is voltage greater than 10v?</li> </ul>	<p>Results _____</p> <p>Yes Contact InterMotive for assistance with lift harness or lift</p> <p>No Contact InterMotive for assistance with module</p>

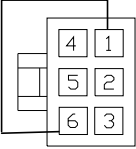
**PINPOINT TEST D: LEDS PROPERLY ILLUMINATE, BUT SHIFTER DOES NOT LOCK**

Test Step	Result/Action to Take
<ul style="list-style-type: none"> <li>Carefully inspect module and harness(es)</li> <li>Verify correct harness connector in the correct module plug</li> <li>Refer to schematics in Guardian documentation</li> </ul>	<p>Results _____</p> <p>Yes Go to D2</p> <p>No Review install instructions reinstall all connectors in their proper position. Test system for normal operation.</p>
<ul style="list-style-type: none"> <li>Are all harness connectors properly installed into module?</li> </ul>	

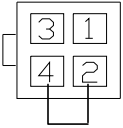
Test Step	Result/Action to Take
<b>D2 Ensure that all wires are in their correct connector cavity</b> <ul style="list-style-type: none"> <li>Carefully inspect all harness connectors</li> <li>Verify that each connector has the correct wire in correct cavity</li> <li>Refer to schematics in Guardian documentation for wire colors</li> </ul>	<p>Results _____</p> <p>Yes Go to D3</p> <p>No Contact InterMotive for assistance with harness</p>
<ul style="list-style-type: none"> <li>Are all wires in their correct connector cavity?</li> </ul>	

Test Step	Result/Action to Take
<b>D3 Check shift lock solenoid</b> <ul style="list-style-type: none"> <li>Disconnect vehicle 2 connector from module, using a jumper jump pin 2 to pin 4</li> <li>Key in the On position</li> </ul> 	<p>Results _____</p> <p>Yes Contact InterMotive for assistance with module</p> <p>No Go to D4</p>
<b>Does shift lock solenoid lock gear selector?</b>	
Test Step back of connector	Result/Action to Take
<b>D4 Check shift lock solenoid</b> <ul style="list-style-type: none"> <li>Remove Guardian gray T harness, and reinstall OEM harness</li> <li>Key in the On position</li> </ul>	<p>Results _____</p> <p>Yes Contact InterMotive for assistance with harness</p> <p>No Contact OEM dealer</p>
<b>Does shift lock solenoid lock gear selector?</b>	
<b>PINPOINT TEST E: LED'S FLASH LIFT DOES NOT OPERATE</b>	
Test Step	Result/Action to Take
<b>E1 Ensure that all connectors are installed correctly</b> <ul style="list-style-type: none"> <li>Carefully inspect module and harness(es)</li> <li>Verify correct harness connector in the correct module plug</li> <li>Refer to schematics in Guardian documentation</li> </ul>	<p>Results _____</p> <p>Yes Go to E2</p> <p>No Review install instructions, reinstall all connectors in their proper position. Test system for normal operation.</p>
<b>Are all harness connectors properly installed into module?</b>	
Test Step	Result/Action to Take
<b>E2 Ensure that all wires are in their correct connector cavity</b> <ul style="list-style-type: none"> <li>Carefully inspect all harness connectors</li> <li>Verify that each connector has the correct wire in correct cavity</li> <li>Refer to schematics in Guardian documentation for wire colors</li> </ul>	<p>Results _____</p> <p>Yes Go to E3</p> <p>No Contact InterMotive for assistance with harness</p>
<b>Are all wires in their correct connector cavity?</b>	
Test Step	Result/Action to Take
<b>E3 Check for overcurrent condition</b> <ul style="list-style-type: none"> <li>Carefully inspect and identify which lift harness has been installed</li> <li>Using the Braun or Ricon lift adapter, pull the fuse to install multimeter in series for current draw test.</li> <li>Set scale on meter to 10Amp</li> <li>Activate lift</li> </ul>	<p>Results _____</p> <p>Yes It will be necessary to install a relay on the lift output circuit</p> <p>No Contact InterMotive for assistance with module</p>
<b>Is the current draw greater than 8 Amps during lift activation?</b>	

## PINPOINT TEST F: LEDS OPERATES WHEN SAFETY CONDITIONS ARE NOT MET

Test Step	Result/Action to Take
<b>F1 Ensure that all connectors are installed correctly</b> <ul style="list-style-type: none"> <li>▪ Carefully inspect module and harness(es)</li> <li>▪ Verify correct harness connector in the correct module plug</li> <li>▪ Refer to schematics in Guardian documentation</li> </ul>          <ul style="list-style-type: none"> <li>▪ Are all harness connectors properly installed into module?</li> </ul>	<p style="text-align: right;">Results _____</p> <p>Yes Go to F2</p> <p>No Review install instructions, reinstall all connectors in their proper position. Test system for normal operation.</p>
Test Step	Result/Action to Take
<b>F2 Ensure that all wires are in their correct connector cavity</b> <ul style="list-style-type: none"> <li>▪ Carefully inspect all harness connectors</li> <li>▪ Verify that each connector has the correct wire in correct cavity</li> <li>▪ Refer to schematics in Guardian documentation for wire colors</li> </ul>          <ul style="list-style-type: none"> <li>▪ Are all wires in their correct connector cavity?</li> </ul>	<p style="text-align: right;">Results _____</p> <p>Yes Go to F3</p> <p>No Contact InterMotive for assistance with harness</p>
Test Step	Result/Action to Take
<b>F3 Check lift operation</b> <ul style="list-style-type: none"> <li>▪ Disconnect lift connector from Guardian module and attempt to operate lift</li> </ul>          <ul style="list-style-type: none"> <li>▪ Does the lift operate?</li> </ul>	<p style="text-align: right;">Results _____</p> <p>Yes Check for short to power on lift circuit or at the lift</p> <p>No Go to F4</p>
Test Step	Result/Action to Take
<b>F4 Check lift operation</b> <ul style="list-style-type: none"> <li>▪ Disconnect lift connector from Guardian module and jump pin 1 to pin 6</li> </ul> <div style="text-align: center; margin: 10px 0;">  <p>Back of Connector</p> </div> <ul style="list-style-type: none"> <li>▪ Does the lift operate?</li> </ul>	<p style="text-align: right;">Results _____</p> <p>Yes Contact InterMotive for assistance with module</p> <p>No Contact InterMotive for assistance with lift harness or lift</p>

## PINPOINT TEST G: SHIFTER NEVER LOCKS

Test Step	Result/Action to Take
<b>G1 Ensure that all connectors are installed correctly</b> <ul style="list-style-type: none"> <li>▪ Carefully inspect module and harness(es)</li> <li>▪ Verify correct harness connector in the correct module plug</li> <li>▪ Refer to schematics in Guardian documentation</li> </ul>	Results _____  Yes Go to G2  No Review install instructions, reinstall all connectors in their proper position. Test system for normal operation.
<ul style="list-style-type: none"> <li>▪ Are all harness connectors properly installed into module?</li> </ul>	
Test Step	Result/Action to Take
<b>G2 Ensure that all wires are in their correct connector cavity</b> <ul style="list-style-type: none"> <li>▪ Carefully inspect all harness connectors</li> <li>▪ Verify that each connector has the correct wire in correct cavity</li> <li>▪ Refer to schematics in Guardian documentation for wire colors</li> </ul>	Results _____  Yes Go to G3  No Contact InterMotive for assistance with harness
<ul style="list-style-type: none"> <li>▪ Are all wires in their correct connector cavity?</li> </ul>	
Test Step	Result/Action to Take
<b>G3 Check shift lock</b> <ul style="list-style-type: none"> <li>▪ Disconnect vehicle 2 connector from module, using a jumper jump pin 2 to pin 4</li> <li>▪ Key in the On position</li> </ul>	Results _____  Yes Contact InterMotive for assistance with module  No Go to G4
	
<ul style="list-style-type: none"> <li>▪ Does shift lock solenoid lock gear selector?</li> </ul>	
Test Step	Result/Action to Take
<b>G4 Check shift lock solenoid</b> <ul style="list-style-type: none"> <li>▪ Remove Guardian gray T harness, and reinstall OEM harness</li> <li>▪ Key in the On position</li> </ul>	Results _____  Yes Contact InterMotive for assistance with harness  No Contact OEM dealer
<ul style="list-style-type: none"> <li>▪ Does shift lock solenoid lock gear selector?</li> </ul>	

